

## STATIONARY SOURCE PERMIT TO OPERATE

This permit supersedes the permit dated September 25, 1998, as amended May 27, 1999

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

U. S. Amines (Portsmouth) LLC  
3230 West Norfolk Road  
Portsmouth, Virginia 23703  
Registration No.: 61355  
**AFS Id. No.: 51-740-00107**

is authorized to operate

an Amines Plant

located at

3230 West Norfolk Road  
Portsmouth, Virginia 23703

in accordance with the Conditions of this permit.

Approved on **DRAFT**.

(for)  
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Director, Department of Environmental Quality

Permit consists of 10 pages.  
Permit Conditions 1 to 31.

**PERMIT CONDITIONS** - the regulatory reference or authority for each condition is listed in parentheses ( ) after each condition.

## **APPLICATION**

1. Except as specified in this permit, the permitted facility is to be constructed and operated as represented in the permit applications dated March 23, 1998 and October 16, 2003, including amendment information dated May 26, 1998, July 7, 1998, May 25, 1999, January 5, 2004, January 19, 2004, February 2, 2004, March 3, 2004, March 25, 2004, May 11, 2004, June 4, 2004, June 7, 2004, June 11, 2004, and July 6, 2004. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.  
(9 VAC 5-80-830 and 9 VAC 5-80-1210 D)

## **PROCESS REQUIREMENTS**

2. **Equipment List** - Previously permitted equipment at this facility prior to the date of this permit consists of the following list. Some equipment may be shared among processes:
  - [A] Production Process, consisting of the following equipment: [F], [J], [K], [L], [M], [N], [O], [P], [Q], [R], [S], [T], [U], [V], [W], [Z], [AA], [BB], [CC], [DD], [EE], and [FF].
  - [B] Production Process, consisting of the following equipment: [G], [H], [J], [K], [L], [O], [P], [R], [S], [T], [U], [V], [W], [Z], [AA], [BB], [DD], [EE]
  - [C] Production Process, consisting of the following equipment: [I], [J], [K], [L], [M], [N], [O], [P], [R], [S], [T], [U], [V], [W], [Z], [AA], [BB], [CC], [DD], [EE], and [FF].
  - [D] Production Process, consisting of the following equipment: [F], [J], [K], [L], [M], [N], [O], [P], [Q], [R], [S], [T], [U], [W], [X], [Y], [BB], and [FF].
  - [E] Production Process, consisting of the following equipment: [F], [J], [K], [L], [M], [N], [O], [P], [Q], [R], [S], [T], [U], [V], [W], [X], [Y], [Z], [AA], [BB], [CC], [DD], [EE], and [FF].
  - Terminal A Storage Tanks, consisting of the following tanks: TA-448, TA-453, TA-414, TA-445, TA-447, TA-452, TA-442, TA-443, TA-439, TA-440, TA-444, TA-449, and TA-454.
  - Terminal B Storage Tanks, consisting of the following tanks: TA-413, TA-415, TA-416, TA-417, TA-418, TA-419, TA-420, TA-441, TA-446, and TA-450.

(9 VAC 5-80-1100 and 9 VAC 5-80-850)

3. **Emission Controls** - Process Unit emissions shall be controlled as follows:
- [F], [G], [H], and [I] tanks shall be controlled by [GG] during tank filling operations. Residual vapors in the [GG] control systems shall be routed to the [HH] control system. Emissions from the [H] tank during cleaning operations shall be controlled by the [HH] control system.
  - Emissions from the [A], [C], [D], and [E] production processes shall be routed to the [HH] control system.
  - Emissions from the [B] production process shall be routed to the [II] control system.
  - [DD], [EE], and [FF] tanks shall be controlled by either the [HH] or [II] control system, depending on whether the [A], [C], [D], or [E] production process is in operation, or whether the [B] production process is in operation, respectively.

The [II] control system and the [HH] control system shall be provided with adequate access for inspection and shall be in operation when the related processes being controlled by these systems are operating.

(9 VAC 5-50-260, 9 VAC 5-80-1180, and 9 VAC 5-80-850)

4. **VOC Emission Controls** - Volatile organic compounds shall not be intentionally spilled, discarded to sewers, stored in open containers, or handled in any other manner that would result in evaporation beyond that consistent with air pollution control practices for minimizing emissions.

(9 VAC 5-50-260, 9 VAC 5-50-90, and 9 VAC 5-80-850)

5. **Monitoring Devices** - The [II] control system shall be equipped with monitoring equipment as described in the Confidential Key. The monitoring equipment shall be in operation when the related control equipment is operating, and shall provide a continuous record of measurements. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the related control equipment is operating.

(9 VAC 5-80-1180, 9 VAC 5-50-20 C and 9 VAC 5-50-260)

6. **Monitoring Device Observation** - The [II] control system used for continuous measurements shall be observed by the permittee with a frequency of not less than once every 8 hour period to ensure good performance of the control equipment. The permittee shall keep a log of the observations.

(9 VAC 5-50-50 H and 9 VAC 5-80-850)

## **OPERATING/EMISSION LIMITATIONS**

7. **Production** - The production of amines shall not exceed the individual production amounts listed in the Confidential Key for [A], [B], [C], [D], and [E] per year, each calculated monthly as the sum of each consecutive 12-month period.  
(9 VAC 5-50-260, 9 VAC 5-80-1180, and 9 VAC 5-80-850)

8. **Emission Limits** - Emissions from the [A], [D], and [E] production processes, each, shall not exceed the limits specified below:

Volatile Organic Compounds	1.4 lbs/hr	3.0 tons/yr
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These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition number 2.

(9 VAC 5-50-260, 9 VAC 5-80-1180, and 9 VAC 5-80-850)

9. **Emission Limits** - Emissions from the [B] production process shall not exceed the limits specified below:

Volatile Organic Compounds	1.1 lbs/hr	2.9 tons/yr
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Hydrochloric Acid	1.9 lbs/hr	5.1 tons/yr
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These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition numbers 2, 4, and 5.

(9 VAC 5-50-260, 9 VAC 5-60-320, 9 VAC 5-80-1180, and 9 VAC 5-80-850)

10. **Emission Limits** - Emissions from the [C] production process shall not exceed the limits specified below:

Volatile Organic Compounds	0.8 lbs/hr	2.9 tons/yr
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These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition number 2.

(9 VAC 5-50-260, 9 VAC 5-80-1180, and 9 VAC 5-80-850)

11. **Emission Limits** - Emissions from the [II] control system shall not exceed the limits specified below:

Nitrogen Oxides (as NO <sub>2</sub> )	2.9 lbs/hr	12.7 tons/yr
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(9 VAC 5-50-260, 9 VAC 5-80-1180, and 9 VAC 5-80-850)

12. **Emission Limits** - Emissions from the [HH] control system shall not exceed the limits specified below:

Nitrogen Oxides (as NO <sub>2</sub> )	2.9 lbs/hr	12.5 tons/yr
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(9 VAC 5-50-260, 9 VAC 5-80-1180, and 9 VAC 5-80-850)

13. **Emission Limits** - Emissions from venting the [M] equipment to the [HH] control system during the [C] production process shall not exceed the limits specified below:

Nitrogen Oxides (as NO <sub>2</sub> )	52.2 lbs/hr	1.1 tons/yr
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(9 VAC 5-50-260, 9 VAC 5-80-1180, and 9 VAC 5-80-850)

14. **Emission Limits** - Emissions from venting the [M] equipment to the [HH] control system during the [A], [D], or [E] production processes shall not exceed the limits specified below:

Nitrogen Oxides (as NO <sub>2</sub> )	138.5 lbs/hr	2.9 tons/yr
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(9 VAC 5-50-260, 9 VAC 5-80-1180, and 9 VAC 5-80-850)

15. **Emission Limits** - Emissions from changeover operations of the [N] shall not exceed the limits specified below:

Nitrogen Oxides (as NO <sub>2</sub> )	143.5 lbs/hr	7.2 tons/yr
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(9 VAC 5-50-260, 9 VAC 5-80-1180, and 9 VAC 5-80-850)

16. **Emission Limits** - Emissions of Volatile Organic Compounds from tanks and loadout operations shall not exceed the limits specified below:

Terminal A Storage Tanks	3.2 tons/yr
Terminal B Storage Tanks	5.6 tons/yr
Loadout Operations	0.6 tons/yr

(9 VAC 5-80-1180 and 9 VAC 5-80-850)

17. **Facility-Wide Emission Limits** - Total emissions from the Amines Facility shall not exceed the limits specified below:

Nitrogen Oxides (as NO <sub>2</sub> )	24.2 tons/yr
Volatile Organic Compounds	34.3 tons/yr
Hydrochloric Acid	5.4 tons/yr

(9 VAC 5-50-260, 9 VAC 5-60-320, 9 VAC 5-80-1180, and 9 VAC 5-80-850)

18. **Emission Limits** - Hazardous air pollutant (HAP) emissions, as defined by §112(b) of the Clean Air Act, from the Amines Facility shall not exceed 9.0 tons per year of any individual HAP or 24.0 tons per year of any combination, calculated monthly as the sum of each consecutive 12-month period.  
(9 VAC 5-80-850)

19. **Visible Emission Limit** - Visible emissions from the [HH] and [II] control system, each, shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A).  
(9 VAC 5-50-80, 9 VAC 5-80-1180, and 9 VAC 5-80-850)

## **RECORDS**

20. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Tidewater Regional Office. These records shall include, but are not limited to:
- Annual production of Amines, for each process, calculated monthly as the sum of each consecutive 12-month period, to verify compliance with Condition 7.
  - Calculated annual emissions, including emission factors and assumptions, from each process ([A], [B], [C], [D], and [E]), calculated monthly as the sum of each consecutive 12-month period, to verify compliance with Conditions 8, 9, and 10.
  - Calculated annual emissions from each control system ([II] and [HH]), calculated monthly as the sum of each consecutive 12-month period, to verify compliance with Conditions 11 and 12.
  - Calculated annual emissions, including emission factors and assumptions, from venting the [M] equipment to the [HH] control system during the [C] production process, calculated monthly as the sum of each consecutive 12-month period, to verify compliance with Condition 13.

- e. Calculated annual emissions, including emission factors and assumptions, from venting the [M] equipment to the [HH] control system, during the [A], [D], or [E] production processes, calculated monthly as the sum of each consecutive 12-month period, to verify compliance with Condition 14.
- f. Calculated annual emissions, including emission factors and assumptions, from changeover operations of the [N], calculated monthly as the sum of each consecutive 12-month period, to verify compliance with Condition 15.
- g. Calculated annual emissions, including emission factors and assumptions, from Terminal A Storage Tanks, Terminal B Storage Tanks, and Loadout Operations, each calculated monthly as the sum of each consecutive 12-month period, to verify compliance with Condition 16.
- h. Calculated annual emissions, including emission factors and assumptions, from the Amines facility, to verify compliance with Conditions 17 and 18. Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period.
- i. Records of monitoring device observations, as required by Condition 6.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-50-50 and 9 VAC 5-80-900)

21. **Testing/Monitoring Ports** - The permitted facility shall be constructed so as to allow for emissions testing and monitoring upon reasonable notice at any time, using appropriate methods. Test ports shall be provided when requested at the appropriate locations.  
(9 VAC 5-50-30 F and 9 VAC 5-80-930)

## **NOTIFICATIONS**

22. **Notification of Testing** - The permittee shall provide written notification of the date of any emission test. Notification shall be postmarked not less than 30 days prior to such date.  
(9 VAC 5-40-50, 9 VAC 5-50-50, and 9 VAC 5-80-930)

## **GENERAL CONDITIONS**

23. **Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:
- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
  - b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
  - c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and

- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.  
(9 VAC 5-170-130)

24. **Notification for Control Equipment Maintenance** - The permittee shall furnish notification to the Tidewater Regional Office of the intention to shut down or bypass, or both, air pollution control equipment for necessary scheduled maintenance, which results in excess emissions for more than one hour, at least 24 hours prior to the shutdown. The notification shall include, but is not limited to, the following information:

- a. Identification of the air pollution control equipment to be taken out of service, as well as its location, and registration number;
- b. The expected length of time that the air pollution control equipment will be out of service;
- c. The nature and quantity of emissions of air pollutants likely to occur during the shutdown period;
- d. Measures that will be taken to minimize the length of the shutdown or to negate the effect of the outage.

(9 VAC 5-20-180 B)

25. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the Tidewater Regional Office, by facsimile transmission, telephone or telegraph, of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour. Such notification shall be made as soon as practicable but not later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement, within two weeks of discovery of the malfunction, giving all pertinent facts, including the estimated duration of the breakdown. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify Tidewater Regional Office in writing

(9 VAC 5-20-180 C)

26. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.

(9 VAC 5-20-180 I)



**27. Maintenance and Operating Procedures** - The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment, monitoring devices, and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.  
(9 VAC 5-50-20 E)

**28. Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:

- a. Knowingly makes material misstatements in the application for this permit or any amendments to it;
- b. Fails to comply with the terms or conditions of this permit;
- c. Fails to comply with any emission standards applicable to the equipment listed in Condition 2;
- d. Causes emissions from this facility which result in violations of, or interferes with the attainment and maintenance of, any ambient air quality standard;
- e. Fails to operate this facility in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect on the date that the application for this permit is submitted;
- f. Fails to comply with the applicable provisions of Article 6, Article 8 and Article 9 of 9 VAC 5 Chapter 80.

(9 VAC 5-80-1010)

**29. Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Tidewater Regional Office of the change of ownership within 30 days of the transfer.

(9 VAC 5-80-940)

30. **Registration/Update** - Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact. The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.1-340 through 2.1-348 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.  
(9 VAC 5-80-900)
31. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.  
(9 VAC 5-80-860 D)